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Training on First Aid forTeachers of Primary Schools At Ismailia City

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Abstract
Background: *Teachers and children spend significant time together within the school environment. Schools are places where one can find an obvious risk of traumatic injuries. Teachers play significant roles in child protection. Therefore, teachers' training on first aid is very important.* ***Aim:*** *the study aimed to evaluate the effect of educational program on first aid for teachers of primary schools at Ismailia city.* ***Design:****Aquasi-experimental design was used in this study.* ***Setting:*** *The study was conducted in seven primary schools in Ismailia city.* ***Sample:*** *Systematic random sample was used in this study; it consisted of allavailable teachers who are in contact with studentsfrom1st grades to 4th grades in the selected primary about (140 teachers).****Tools:*** *Two tools were used.* ***First tool:*** *interviewing questionnaire which included two parts: Socio demographic data, and knowledge of primary school teachers regarding first aid.* ***Second tool:*** *Observational Checklist: It included two parts: assessment of safety school environment and assessment of school teachers' practice regarding first aid.* ***The results:*** *There was statistically significant difference (p≤0. 01) Improvement in the mean score of total knowledge of studying sample about the first aid post and follow up implementation of the program compared to pre implementation of the program. There was statistically significant (p≤0.01) improvement in the mean score of the total practice of the study sample about the first aid post and follow up implementation of the program compared to pre implementation of the program.* ***Conclusion:*** *The knowledge and practice of primary school teachers about first aid were improved post and follow up implementation of the program compared to pre implementation of the program* ***Recommendation:*** *Continuous educational and training programs for teachers about first aid for early management of injuries and emergencies.*

Key Words:*First aid, school children, primary school teachers, Training program*

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I. Introduction

First aid is complex and situation specific, so that more informed and better developed; first aider are more eligible to distribute with an unexpected sickness or sudden trauma. It can be obtained by everybody and comprises a self-charge, so that first order can be any person exist in the setting of an emergency and provides such care like parents, teachers, policeman, fire fighter, first responder, professional medic **(Piazza, 2014; Singletary et al., 2015).**

School children spend most of their life time in school where they may cause different kinds of small accidents, which deliver an impingement on their present and future state of wellness. Because of their developmental and behavioral properties including unawareness of the hazards and being dynamic as well as physical properties including narrower airways, smaller body mass children are exposed to injuries and carry a higher hazard. Frequently, offspring have minor bruises but at times, they may face major injuries resulting in fractures, bleeding, fainting consequently, first aid like therapeutic management is importance**(ElwardanyAly & Khalaf, 2017).**

First aid is applied to ill persons in any health threatening setting in order to save life, prevent degradation of the situation, or contribute to a treatment process before professional medical care is available. First aid refers to assessments and interventions that can be performed by a bystander (or by the victim) with minimal or no medical equipment **(Markenson et al., 2010).**

Teachers are the main caregivers and the first line of protection for school children. Their role complements that of parents. During school hours, school teachers are actually the first respondent in cases of

disasters or emergencies. They must be able to deal properly with health emergencies both in normal children, and those children with special health care needs.. However, this role can only be properly achieved if teachers are equipped with the needed skills. Therefore, appropriate in service training for teachers in child protection is of major importance **(Awad et al., 2015).**

Significance of the study:

World Health Organization has stated a fact that injuries are the leading cause of death and disability among school-age. About 10 – 25% of injuries occur to children while they are in school, and around 25% of emergency department visitors are of children with special health care needs **(WHO, 2010).**In Egypt around 38% of all injuries occur among children less than20 years of age**(El-Sayed et al .,2012).**

In Egypt, at there are little researches about first aid knowledge and practice measures among school teacher, also the researchers noticed that teachers were having poor knowledge and unfavorable practices in dealing with accidents and injuries in school**(ElwardanyAly & Khalaf, 2017)**. So the present study aimed to develop knowledge and practices of teachers through the implementation of training program regarding first aid measures.

Aim of the study

The aim of the study is to evaluate the effect of educational program on first aid for teachers of primary schools at Ismailia city, through:

1. Assessing knowledge and practice of teachers of primary schools about first aid in some emergency situation that occurs to school age children.
2. Designing an educational program for teachers of primary schools about first aid.
3. Implementation of educational program for teachers of primary schools about first aid.
4. Evaluating the impact of an educational program regarding the teachers of primary school practices about first aid.

Research Hypothesis:

To fulfill the aim of the study, the following hypotheses are formulated:

1. Knowledge of the teachers toward first aid will be improved after implementation of the educational program.
2. The Practices of the teachers toward first aid will be improved after implementation of the educational program.

II. Subjects And Methods

Research design

Aquasi-experimental study design was conducted for this study.

Study Setting:

This study was conducted at primary schools in Ismailia city (North Ismailia administration). Ismailia is an urban city. Seven primary schools were selected randomly from the total number (69schools).

Subjects:

The subjects of the present study were selected randomly from previously mentioned schools; the subject consisted of 140 teachers who are in contact with studentsfrom1st grades to 4th grades.

Sampling

The Multistage random sample was used in this sample:

1. ***First stage:***The total number of primary schools in North Ismailia administration was (69) schools, 10%was chosen randomly from this primary schools and they are approximately 7 schools.
2. ***Second stage:***Allavailable teachers who are in contact with studentsfrom1st grades to 4th grades in the selected primary schools were included in the sample.

Tools of data collection:

Two tools were used for data collection.

<u>First tool</u>: An interviewing Questionnaire:

It was developed by the researcher after reviewing related literature, which two parts to gather the following data:

<u>Part I:</u>Concerned with Socio demographic data of primary school teachers such as (age, years of experience and level of education, Place of residence).

Part (II): It included questions about primary school teachers' knowledge regarding first aid.

Second tool: An Observational Checklist:

It included two parts to gather the following data:

Part I: Observational Checklist for safety school environment to assess school building, design, playground, classrooms, and ventilation, ***Adapted from (Abd-Elsatar, 2004&Jawad, 2004).***

- It's divided into 5 domains: (school place and building, school design, media access, trips and entertainments and health visitor) adapted from, ***(Abd-Elstar, 2004).***

Part (II): Observational Checklist to assess school teachers' practice about first aid in relation to (Wounds, Fractures, Epileptic fits, fainting, Epistaxis, and Suffocation).

Content validity:-The tools were tested through five expertise from community health nursing departments, to assess the study tools for clarity, relevance, applicability, comprehensive, understandable and their recommendations were modified

Administrative and ethical Design:-

An official letters were issued from the Faculty of Nursing, Suez Canal University to the information security office in the Central Agency for Public Mobilization &Statistics (CAPMAS), to get an approval for data collection to conduct the study, which forwarded to the directorate of education and the Ismailia educational administration to obtain permission for collecting the necessary data for the selected schools.

Written approval was obtained from the manager of the selected schools based on the approval of the directorate of education in Ismailia. Before starting the data collection the agreements were obtained and the aim of the study explained to the schools managers to gain their cooperation during data collection.

Ethical Consideration

Written permission for the collection of data was obtained from the responsible managers of schools after explaining the aim of the study. Also, the aim was explained to teachers to be familiar with the importance of their participation. Promote the confidentiality of data and teacher's freedom to withdraw from the study at any time.

Operational Design:-

1. Pilot Study

A pilot study was conducted on 14 primary teachers representing (10% of the estimated sample) to evaluate the feasibility of implementing the designed tools and time required to fill in each tool. According to the obtained results, modifications were done. The subjects included in the pilot study were excluded later from the study samples.

2. Field Work

Data were collected from September 2016 and ended in May 2017, *"period of examination and holidays were excluded".* It has started with the assessment phase, which took three weeks to be fulfilled. Informed consent was secured before collecting before data collection after explanation of study aim and objectives. The researcher allocated three days/week, three hours /day for data collection; the average time consumed to fill tools was 30-45miutes.

Two weeks later, after the assessment phase (pretest) preparations for starting the implementation of the program were initiated. Program content was prepared according to actual education needs derived from the assessment phase. The implementation phase of the program took 3monthes. As for the evaluation phase (posttest) it was done through four weeks to evaluate the level of improvement among the study subjects. Second posttest was done three months later, after program implementation.

Program construction:

This was implemented through four phases as namely:-

A. Assessment phase.
B. Planning phase.
C. Implementation phase.
D. Evaluation phase.

A. Assessment phase:

In this phase, the researcher collected the following data:

- ❖ Assessment of teachers socio demographic data, Assessment of teachers knowledge and practices about first aid (pretest program) as they reported.
- ❖ The assessment phase (pretest) was done 140 teachers and took three weeks to be fulfilled, one visit for each school, each session took 45 minutes were allocated for data collection, around 20 teachers were assessed per visit.
- ❖ The pretest format to assess the baseline data for teachers' knowledge and practices, and to detecting the needs through collecting data from them.
- ❖ The aim of the study was explained to the teachers and distribute questionnaire to them, the average time needed to fill the questionnaire was 30-45 minutes.

B. Planning Phase :

- ❖ The program was designed by the researcher based on teachers' needs obtained from the study tools; also, after reviewing the relevant literature in various aspects related to study. This program contents was revised and validated by the supervisors.
- ❖ Overall goal of the program was to: Improve primary school teacher's knowledge and practices related to first aid.
- ❖ General objective of the program: by the end of the program the primary school teachers would be able to:
- Define first aid.
- Enumerate the objectives of first aid.
- List principles of first aid.
- List content of first aid bag.
- Define first aider.
- List principle and skill of first aider.
- Enumerate the correct first aid steps for child with wound, fracture, fainting, epistaxis, suffocation and epileptic convulsion.
- Apply the first aid measures for injured child with wound.
- Provide care to fractured child.
- Demonstrate first aid measures for child with epileptic convulsion.
- Apply first aid measure for fainting child inside school.
- Demonstrate first aid measures for epistaxis.
- Apply first aid measures for suffocation that occurs to primary school children.
-

❖ ***Program booklets:***

A booklet including all content of the program was designed and was given to the school teachers as an educational reference during program implementation and as self-learning reference after program implementation. Its aim was providing accurate knowledge and practice related to first aid for primary school teachers.

C. Implementation Phase:

- The implementation phase was taken 12sessions (5for theoretical &7practical) each session was taking 45minutes for each school.
- The teaching methods were carried out through lecture, discussion, role play, simulation, while the media was included pamphlets, data show, booklets, video and presentations.

- By the end of each session a summary was made and time allocated for questions and answers &plan for next session were made.

D. Evaluation Phase:

- This phase aimed to evaluate the level of improvement in knowledge and practice of primary school teachersrelated to first aid, throughimplementation of posttest immediately by end of the program.
- As well as to identify differences, area of improvement and defects. Evaluation was done after implementation within one week and took four weeks to be done. The second posttest was done three months later after program implementation.
-

VI. Statistical Design:

All Data were collected, tabulated and subjected to statistical analysis. Statistical analysis is performed by SPSS in general (version 17), also Microsoft office Excel is used for data handling and graphical presentation.

Quantitative variables are described by the Mean, Standard Deviation (SD), the Range (Maximum – Minimum)

Qualitative categorical variables are described by proportions and Percentages.
For quantitative continuous data independent samples t test is used for comparing the means of two groups. One way analysis of variance (ANOVA) is used for comparing the means of more than two groups.

Pearson correlation coefficient is used to determine the correlation of two continuous variables. For categorical variables Chi squared test is applied.
Significance level is considered at $P < 0.05$ (S); while for $P < 0.01$ is considered highly significant (HS). Two Tailed tests are assumed throughout the analysis for all statistical tests.

Study limitations:
There is no limitation faced the researcher during data collection and program implementations.

III. Results

The results of this study were presented as follows:
Part I: Sociodemographic characteristics of the studied subjects.
Part II:Knowledge of studied sample about first aid throughout the program phase.
Part III: Practice of studied sample about first aid (wound, Fractures, epilepsy, Fainting, epistaxis, and Suffocation).
Part IV: Association between dependent and independent variables throughout the program phase.
Part V: Assessment of schools environment.

Part I: Sociodemographic characteristics of the studied subjects:

Table (1): Distribution of studied sample according to their Socio-demographic characteristics (n=140)

Socio-demographic characters	**No N=140**	**%**
Age (in years)		
≤40	77	55
>40	63	45
Mean± SD 39.23±8.0		
Gender		
Males	64	45.7
Females	76	54.3
Residence		
Urban	124	88.6
Rural	16	11.4
Marital status		
Married	107	76.4
Unmarried	33	23.6
Experience (years)		
≤20	112	80.0
>20	28	20.0
Educational level		
Diploma	40	29.0
BSC	90	64.0
Post graduate	10	7.0

Part II:Knowledge of studied sample about first aid throughout the program phase.

Table (2): General Knowledge of studied sample about first aid (n=140) (pre-post and follow up program).

General Knowledge	PRE		POST		FOLLOW UP		F	P value
	Mean	SD	Mean	SD	Mean	SD		
1. Meaning of first aid	0.59	0.49	1.00	0.00	0.68	0.47	42.8	0.001**
2. Importance of first aid	1.20	0.77	1.00	0.00	1.29	0.45	144.1	0.001**
3. First aid principles	1.30	0.58	2.66	0.56	1.66	0.49	235.3	0.001**
4. Patient's consciousness.	1.48	0.81	2.77	0.42	1.81	0.64	152.1	0.001**
5. Examine airway in the affected person.	1.20	0.64	2.74	0.44	1.71	0.54	291.2	0.001**
6. There is a first-aid bag.	0.96	0.20	1.00	0.00	0.96	0.20	3.1	0.05 *
7. Components of first aid bag.	1.62	0.84	2.76	0.43	1.89	0.65	114.0	0.001**
8. Meaning of first aider.	0.88	0.33	1.00	0.00	0.91	0.28	8.8	0.001**
9. Characteristics of a first aider.	1.42	0.64	2.95	0.22	1.71	0.57	357.9	0.001**

10. Skill of first aider.	1.57	0.87	2.91	0.33	2.05	0.63	153.7	0.001**
11. First aider protection.	1.08	0.42	1.71	0.45	1.34	0.47	71.1	0.001**
TOTAL score of general Knowledge about first aid.	13.33	6.59	22.45	2.85	16.01	5.39	431.9	0.001**

F: One WAY ANOVA
***significant at < 0.05**
****Highly significant, p-value ≤0.01**

Part III: Practice of studied sample about first aid (wound, Fractures, epilepsy, Fainting, epistaxis, and Suffocation).

Table (3): Practice of studied sample about first aid (wound, Fractures, epilepsy, Fainting, epistaxis, and Suffocation). (n= 140) (Pre, post and follow up program).

Practice	PRE		POST		FOLLOW UP		F	P value
	Mean	SD	Mean	SD	Mean	SD		
First aid for wound	1.07	1.27	9.54	1.01	3.97	1.21	1895.1	0.001**
First aid for Fractures	1.21	1.12	9.34	1.14	4.15	0.89	2124.8	0.001**
First aid for epilepsy	1.41	1.13	7.72	0.65	3.29	1.10	1526.4	0.001**
First aid for Fainting	1.03	1.00	7.88	0.44	3.46	1.47	1414.4	0.001**
First aid for Epistaxis	0.97	0.96	8.18	0.97	3.68	1.28	1579.3	0.001**
First aid for Suffocation	1.03	1.00	10.61	1.54	4.17	1.63	1454.1	0.001**
TOTAL First aid training	6.73	4.70	53.27	3.96	22.73	7.58	4590.7	0.001**

Part IV: Association between dependent and independent variables throughout the program phase:
Table (4): Relation between studied sample knowledge and Level of education (Pre, post and follow up program).

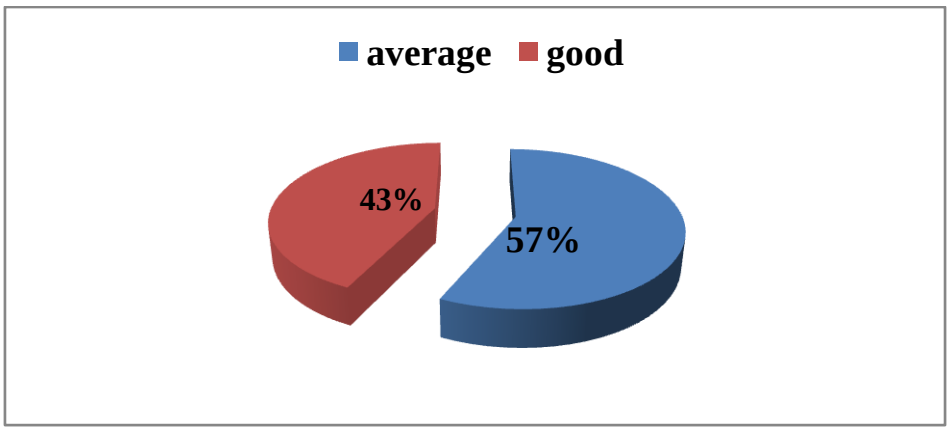
Table (5): Relation between studied sample practice and Level of education(Pre, post and follow up program).

Level of education		N	Mean	Std. Deviation	t	P value
Total score of general Knowledge on first aid PRE	Diploma	40	19.92	4.14	-0.35	0.72331
	B Sc	90	20.18	4.07		
Total score of Knowledge on school accident PRE	Diploma	40	15.31	5.00	0.90	0.36869
	B Sc	90	14.34	6.53		
Total score of general Knowledge on first aid POST	Diploma	40	30.10	2.09	-0.42	0.67786
	B Sc	90	30.24	1.78		
Total score of Knowledge on school accident POST	Diploma	40	27.49	2.07	-2.03	0.04464*
	B Sc	90	28.21	1.96		
Total score of general Knowledge on first aid FOLLOWUP	Diploma	40	22.45	2.58	0.04	0.96538
	B Sc	90	22.43	2.68		
Total score of Knowledge on school accident FOLLOWUP	Diploma	40	19.82	2.74	-0.51	0.61428
	B Sc	90	20.09	3.18		

Table (5): Relation between studied sample practice and Level of education(Pre, post and follow up program).

Level of education		N	Mean	Std. Deviation	T	P value
Total First aid training Practice PRE	Diploma	40	6.04	3.56	-1.27	0.20542
	B Sc	90	7.10	5.20		
Total First aid training Practice POST	Diploma	40	54.92	3.73	3.96	0.00012**
	B Sc	90	52.27	3.78		
Total First aid training Practice FOLLOWUP	Diploma	40	22.69	3.98	-0.08	0.93426
	B Sc	90	22.75	3.45		

Part V: School environment:
Figure (1): Safety school environment (n=7)



IV. Discussion

School aged children are exposed to numerous kinds of injury in the school which impact their current and upcoming condition of health. When children are injured, the actions taken are of vital importance. Timely first aid act to lessen the severity of injury. Consequently, research had identified schools as an ideal setting for learning first aid as a mean of injury prevention **(Reveruzzi et al., 2013)**. Unfortunately, school health services are ignored in some countries particularly the developing ones. This contributes to shortage in awareness and knowledge regarding sudden illnesses and first aid measures**(Al-Samghan et al., 2015).**

The first aid is an urgent attention delivered to victims of sudden illness or injury until medical helps arrive. So that, early treatment of such emergencies decreases morbidity and deaths among school aged children. First aid is complex and situation specific, so that more informed and better trained; first aiders are more eligible to deal with an unexpected illness or sudden injury (**Abdellaet al., 2015; Khatatbeh, 2016).**

School consists of an environment in which injuries may affect students, and the teacher has a significant chance to be present and act during a situation. So educating teachers in first aid increase the safety of every student they come in contact with. Also, a teacher trained in first aid is more motivated to avoid personal injury, because their first aid training gives them a greater appreciation of the potential serious consequences. Moreover, teachers trained in first aid can be taught to appreciate the importance of safety,

prevention and risk reduction, making them ideal advocates for spreading safety awareness for students**(ElwardanyAly & Khalaf, 2017).**

Regarding Sociodemographic characteristics of the studied sample:

The present study showed that about more than half of them aged ≤40 years; this result in agreement with **Kumar et al., (2015),**who studied "Knowledge of primary school teachers on first aid management of minor accidents among children at Ambala" and reported that equally 35% of teachers were in the age group 31-40.On the other hand this disagreed with **Kumar et al., (2013)**,who studied "Perception and practices regarding first-aid among school teachers in Mysore" and mentioned that nearly half of the teachers were in the age group of more than 40 years.

In referral to sex of the participated teachers, it was observed that morethan half of them were females; this agreed with**ElwardanyAly & Khalaf, (2017),**who studied "Impact of training program regarding first aid knowledge and practices among preparatory schools' teachers at Assiut City" and found that more than two thirds of them were females and with **Kumar et al., (2015)**, who studied "Knowledge of primary school teachers on first aid management of minor accidents among children at Ambala" and reported that morethan half of primary school teachers were females.

Our results were also in the line with **Masih et al., (2014),** who studied "Knowledge and practice of primary school teachers about first aid management of selected minor injuries among children" and found thatmajority of the school teachers werefemale .On the other hand these results disagreeing with **Mersal & Aly, (2016)** ,who studied "Developing disaster management and first aid guidelines for school teachers in Cairo Egypt"and mentioned that more than half of them were males.

From the researcher point of view, these findings may come back to that females are having better desire and more willing than males toattach in a program related to first aid and they have a desire to know everything about school injury and their first aid. They also want to know first aid to deal not only with school injury, but also daily incidents that occur to them at homes.

The present study revealed that two thirds of teachers had Bachelor degree; this in agreement with***Arli & Yildirim, (2017),*** who studied "The Effects of Basic First Aid Education on Teachers' Knowledge Level" , and mentioned that (87.5%) of them had bachelor's degree, **Al-Samghan et al., (2015),** who studied "Primary School Teachers' Knowledge about First-Aid" and found that majority of them had Bachelor degree. Also in the line with **Sönmez et al., (2014)** ,who studied "Knowledge levels of pre-school teachers related with basic first-aid practices, Isparta sample", and reported that most of them were university graduates.

Regarding teachers' years of experience, it was recorded that most of studied teachers had experience less than or equal 20 years. This finding was in agreement with **Masih et al., (2014),** who studied "Knowledge and practice of primary school teachers about first aid management of selected minor injuries among children" , and found that majority of school teachers were having 0-15 years of teaching experience. Also in agreement with **Kumar et al., (2013)**, who studied "Perception and practices regarding first-aid among school teachers in Mysore",and reported that 24.4% had teaching experience for 16-20 years.

On the other hand these results disagreeing with**Mersal & Aly, (2016),** who studied "Developing disaster management and first aid guidelines for school teachers in Cairo Egypt" and mentioned that nearly half had experience more than 20 years. From the researchers' point of view, years of experience increases the teachers' knowledge about most common injuries that the students are exposed to through dealing with students and thus make them more in need of first aid for these incidents.

Regarding to the Knowledge and practice of studied sample about first aid:

The present study also revealed that there was statistically significant ($p \leq 0.01$) improvement in all items of general Knowledge of studied sample about the first aid post and follow up implementation of the program compared to pre implementation of the program. This study revealed that general knowledge of studied sample after period of 6 months decreased in comparison with posttest. These results are in agreement with **Abdella et al. (2015),** who studied "Intervention program for the kindergarten teachers about pediatrics first aids", and reported that high significant improvement of general knowledge of the studied group in the post and follow up intervention in comparison to pre intervention.

The current study showed that there was statistically significant ($p \leq 0.01$) improvement in the mean score of total knowledge of studied sample about first aid post and follow up implementation of the program compared to pre implementation of the program. This is in agreement with **ElwardanyAly & Khalaf, (2017),** who studied "Impact of training program regarding first aid knowledge and practices among preparatory schools' teachers at Assiut City",and reported that the vast majority of teachers had poor knowledge before application of the educational program. Also in the line with our study **Mersal & Aly, (2016),** who studied "Developing disaster management and first aid guidelines for school teachers in Cairo Egypt" and reported thatregarding the difference in total first aid knowledge among school teachers in pre and post intervention,the improvement in their first aid knowledge after implementation of program.

Also in agreement with our results **Behairy and Al-Batanony, (2015),** who studied "Effectiveness of First-Aid and Basic Life Support Intervention Program on School Health Advisors", and reported that study participants, in general, had poor knowledge pretest. A statistically significant improvement was shown in the knowledge and practice at post and follow-up tests. Moreover, **Abdella et al. (2015),** who studied "Intervention program for the kindergarten teachers about pediatrics first aids", and reported that there was poor knowledge about pediatric first aid among staff in the preschools, before the program intervention while their results showed that the knowledge score to be significantly higher among them after the program implementation.

Our findings were also consistent with **Masih et al., (2014)**who studied "Knowledge and practice of primary school teachers about the first aid management of selected minor injuries among children", and reported that participants' knowledge improved after a teaching program. Furthermore, in a study carried out by **Al-Robaiaay (2013),** who studied "Knowledge of primary school teachers regarding first aid in Baghdad Al-Rusafa", and reported that more than three-quarters of the teachers had a lack of knowledge regarding first aid.

From the researcher point of view, these findings may be clarified by lack of training programs on first aid management and highlight the importance of providing training on first aid for school teachers.

Regarding to practice of studied sample about first aid, the present study showed that there was statistically significant ($p \leq 0.01$) improvement in the mean score of total practice of studied sample about first aid post and follow up implementation of the program compared to pre implementation of the program. This study revealed that total practice of studied sample after period of 6 months decreased in comparison with posttest. These findings were in agreement with **ElwardanyAly & Khalaf, (2017),** who studied "Impact of training program regarding first aid knowledge and practices among preparatory schools' teachers at Assiut City",and noticed that there was a statistically significant difference between teachers' performance during pre/posttest training program ($p = .000$).

Our results are in the line with **Mersal & Aly, (2016),** who studied "Developing disaster management and first aid guidelines for school teachers in Cairo Egypt" and reported that many incorrect practices were prevalent among respondents and most of them had inadequate performance related to first aid. Meanwhile after implementation school teachers acquired good first aid practices with statistical significant difference pre and post intervention.

Furthermore, **Abdella, et al. (2015),** who studied "Intervention program for the kindergarten teachers about pediatrics first aids", and noted that before the program; almost all teachers had unsatisfactory skills. In comparison, more than half of them had satisfactory skills immediately post and during following up of the program intervention with statistical significance difference.

Also in agreement with **Behairy and Al-Batanony, (2015),** who studied "Effectiveness of First-Aid and Basic Life Support Intervention Program on School Health Advisors", and detected that there was significant improvement in the correct situational practice in the post intervention and follow up phases than the pre intervention phase ($P<0.001$).

This is in the line with **Masih et al. (2014),** who studied "Knowledge and practice of primary school teachers about first aid management of selected minor injuries among children", and found that practices posttest score of primary school teachers was significantly higher compare to pretest practice score about the first aid management of selected minor injuries such as minor fracture, epistaxis, minor wounds, etc.

From the researcher point of view these findings indicated that there was a significant improvement after course training and slightly decrease in follow up phase due to the fact that there is the capacity to acquire theoretical knowledge associated with new information and its applicability in potential situations that can be experienced in the school environment. This may be explained by the fact that the majority of studied teachers did not attend any training courses in first aid and this may also be due to forgetting theoretical information caused by lack of practical training to reinforce information.

The current study results revealed that the first aid of suffocation, fracture and wound were more highly improved post and follow up, compared to first aid of epilepsy, fainting and epistaxis. This result in congruence with **Abdella et al. (2015)**,who studied "Intervention program for the kindergarten teachers about pediatrics first aids", and found that chocking and fracture were more highly improved immediately after and follow the intervention, compared to first aid in wound, epistaxis and burn.

From the researchers' point of view, first aid of suffocation, fracture and wound were newly recognized procedures for those teachers and they have great desire to catch more practices in this concern.

As regard to the association between the teacher's knowledge and selected demographic variables such as years of experience, level of education, the present study showed that there were statistically significant correlation between total score of general Knowledge on first aid (pre and follow up) and years of experience. This is in the line with **Mersal & Aly, (2016),** who studied "Developing disaster management and first aid guidelines for school teachers in Cairo Egypt" and found significant correlation ($p > .000$) between experience of school teachers and between their knowledge about first aid .

These results are also in agreement with **Behairy & Al-Batanony, (2015),** who studied "Effectiveness of First-Aid and Basic Life Support Intervention Program on School Health Advisors", and detected that there were statistically significant correlation between years of experience and knowledge (P<0.001).

Moreover, the findings of the current study are also consistent with **Abdella, et al., (2015),** who studied "Intervention program for the kindergarten teachers about pediatric first aids", and noted that a significant association between improving knowledge with teachers' years of experience.

On the other hand these findings were in contrast with**ElwardanyAly & Khalaf, (2017)**, who studied "Impact of training program regarding first aid knowledge and practices among preparatory schools' teachers at Assiut City",and reported that there was no statistically significant difference between level of knowledge and years of experience. **Al-Robaiaay (2013),** who studied "Effectiveness of First-Aid and Basic Life Support Intervention Program on School Health Advisors", and observed that there was no statistically significant difference between level of knowledge and years of experience, and **Devashish et al., 2013**who studied "Assessment of Knowledge and Practices of First Aid among the School Teachers of Vadodara City" and found that there wasn't any statistically significant difference between level of knowledge and years of experience. The same result with **Mhaske's, (2012),** who studied "Knowledge regarding disaster management among secondaryschool teachers" and revealed that therewas no significant association of pre and posttest knowledge scores with years of experience.

From the researcher point of view, these findings indicated thatwhenever the teacher has experience in dealing with children, this will help to know the most important incidents that they may be exposed to.

V. Conclusions

Based on the finding and research hypothesis of the present study, it was concluded that:

The knowledge and practice of primary school teachers about first aid were improved post and follow up implementation of the program compared to pre implementation of the program. Statistically significant different ($p \leq 0.01$) improvement in the mean score of knowledge and practices of studied sample about first aid post and follow up implementation of the program compared to pre implementation of the program.

VI. Recommendations

In the view of the study findings the followings are recommended:

1- Distributes educational booklet about first aid for school accidents for teachers.

2- Replication of the program in other schools to improve the teachers' knowledge and practices regarding first aid.

3- First aid knowledge and practices should be incorporated in the educational curricula.

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